

Supplemental Content

Supplement to:

Age at Exposure to Surgery and Anesthesia in Children and Association with Mental Disorder Diagnosis

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This supplemental material has been provided by the authors to give readers additional information about their work.

Table 1: ICD-9 Procedure Codes Identifying the Anesthetic and Surgical Exposure

ICD-9 Codes	Description of Procedure
282	Tonsillectomy without adenoidectomy
283	Tonsillectomy with adenoidectomy
286	Adenoidectomy without tonsillectomy
433	Pyloromyotomy
640	Circumcision
1711	Laparoscopic repair of direct inguinal hernia with graft or prosthesis
1712	Laparoscopic repair of indirect inguinal hernia with graft or prosthesis
1713	Laparoscopic repair of inguinal hernia with graft or prosthesis, not otherwise specified
1721	Laparoscopic bilateral repair of direct inguinal hernia with graft or prosthesis
1722	Laparoscopic bilateral repair of indirect inguinal hernia with graft or prosthesis
1723	Laparoscopic bilateral repair of inguinal hernia, one direct and one indirect, with graft or prosthesis
1724	Laparoscopic bilateral repair of inguinal hernia with graft or prosthesis, not otherwise specified
5300	Unilateral repair of inguinal hernia, not otherwise specified
5301	Other and open repair of direct inguinal hernia
5302	Other and open repair of indirect inguinal hernia
5303	Other and open repair of direct inguinal hernia with graft or prosthesis
5304	Other and open repair of indirect inguinal hernia with graft or prosthesis
5305	Repair of inguinal hernia with graft or prosthesis, not otherwise specified
5310	Bilateral repair of inguinal hernia, not otherwise specified
5311	Other and open bilateral repair of direct inguinal hernia
5312	Other and open bilateral repair of indirect inguinal hernia
5313	Other and open bilateral repair of inguinal hernia, one direct and one indirect
5314	Other and open bilateral repair of direct inguinal hernia with graft or prosthesis
5315	Other and open bilateral repair of indirect inguinal hernia with graft or prosthesis
5316	Other and open bilateral repair of inguinal hernia, one direct and one indirect, with graft or prosthesis
5317	Bilateral inguinal hernia repair with graft or prosthesis, not otherwise specified

Table 2: CPT-4 Codes Identifying the Anesthetic and Surgical Exposure

CPT-4 Codes	Description of Procedure
42820	Tonsillectomy and adenoidectomy; younger than age 12
42821	Tonsillectomy and adenoidectomy; age 12 or over
42825	Tonsillectomy, primary or secondary; younger than age 12
42826	Tonsillectomy, primary or secondary; age 12 or over
42830	Adenoidectomy, primary; younger than age 12
42831	Adenoidectomy, primary; age 12 or over
42835	Adenoidectomy, secondary; younger than age 12
42836	Adenoidectomy, secondary; age 12 or over
43520	Pyloromyotomy, cutting of pyloric muscle
49491	Repair, initial inguinal hernia, preterm infant; reducible
49492	Repair, initial inguinal hernia, preterm infant; incarcerated or strangulated
49495	Repair, initial inguinal hernia, full term infant younger than age 6 months; reducible
49496	Repair, initial inguinal hernia, full term infant younger than age 6 months; incarcerated or strangulated
49500	Repair initial inguinal hernia, age 6 months to younger than 5 years; reducible
49501	Repair initial inguinal hernia, age 6 months to younger than 5 years; incarcerated or strangulated
49505	Repair initial inguinal hernia, age 5 years or older; reducible
49507	Repair initial inguinal hernia, age 5 years or older; incarcerated or strangulated
49525	Repair inguinal hernia, sliding, any age
49650	Laparoscopy, surgical; repair initial inguinal hernia
49651	Laparoscopy, surgical; repair recurrent inguinal hernia
54161	Circumcision, surgical excision other than clamp, device, or dorsal slit

Table 3: ICD-9 Diagnosis Codes Identifying ICD-9 Coded Mental Disorder Diagnoses

ICD-9 Codes	Description of Diagnosis
295	Schizophrenia
296.00–296.16, 296.4–296.89	Bipolar disorder
296.20– 296.35, 311	Depression
300.00–300.29	Anxiety disorder
312.00–313.89	Conduct disorder
299	Autism
314	Attention deficit hyperactivity disorder
317–319	Intellectual disability
315	Developmental delay
Composite variable of miscellaneous mental health diagnoses inclusive of:	
293-294	Mental disorders due to conditions classified elsewhere
297	Delusional disorders
298	Other nonorganic psychoses
300.10–300.19	Dissociative and somatoform disorders
300.30– 300.90	Dissociative and somatoform disorders
301.10–301.90	Personality disorders
307	Special symptoms or syndromes not elsewhere classified
308	Acute reaction to stress
309	Adjustment reaction
313.90–313.99	Disturbance of emotions specific to childhood and adolescence

Supplemental Methods: Details on Propensity Score Calculation and Matching Methods

Variables Used to Calculate Propensity Scores for Exposed Children:

Propensity scores for each of the four individual procedures of interest were independently calculated for children in each age at exposure category, and were calculated separately for TX and NY. Any age at exposure category where a specific procedure was performed in fewer than 10 children was excluded from analysis. The variables used to calculate propensity scores were divided into two categories, those recorded at the time of birth and those recorded at the time of exposure.

Variables recorded at the time of birth: baseline sociodemographic characteristics (sex, race/ethnicity, income calculated by zip code of residence at birth and divided into quartiles¹), and comorbidity variables including ICD-9 coded prematurity and congenital anomalies as binary variables (codes listed in Supplemental Content Table4).

Variables recorded at the time of exposure: comorbidity as described by Chronic Condition Indicator (CCI) coded binary variables, which classify ICD-9 codes into body systems with acute and chronic conditions for each system.² A particular CCI was recorded for a child if they had a diagnosis for that condition anytime at or prior to exposure. The number of inpatient stays and outpatient visits at the time of exposure were also coded as multilevel categorical variables. Inpatient stays were classified as the total number of stays, with all children having at least one stay since all had an inpatient stay for their own birth. The outpatient visits variable however was the number of outpatient visits split into quartiles.

Codes for medical conditions and visits directly related to the surgical procedure of interest were not used to evaluate comorbidity. For example, in a child needing circumcision for phimosis, the diagnosis of phimosis and the physician visits assessing phimosis prior to surgery were not used to calculate pre-existing comorbidity. Several specific CCI categories for disease types were also not used to assess comorbidity: “complications of pregnancy”, excluded because it referred to the mother and was only intermittently coded on the records of the child, “mental disorders”, because it was the outcome of interest, and “symptoms, signs, and ill-defined conditions” and “factors influencing health status and contact with health services” because these categories contained a mixture of heterogeneous and vague ICD-9 codes. Children who had procedures during the birth admission were also excluded due to a lack of data on patient comorbidity and inpatient and outpatient visits prior to the time of exposure.

Variables Used to Calculate Propensity Scores for Unexposed Children:

In the unexposed children, the variables recorded at the time of birth were the same as those used in the exposed children. For the variables recorded at the time of exposure, the same variables were also used, however since these children were unexposed to surgery and anesthesia, the time at which these variables would be assessed needed to be determined. For the exposed children in each age at exposure category, the median age at exposure was calculated. This calculated age was then applied to the unexposed children in each age at exposure category to determine the age at which the CCI variables and number of physicians visits were assessed.³

Calculation of Propensity Scores for Exposed and Unexposed Children and Propensity Score Matching:

Fifty sociodemographic and clinical comorbidity variables were used to calculate propensity scores for the exposed and unexposed children. Using a logistic regression model, the predicted probability of each specific procedure in each age at exposure category was calculated. For example, for a child in TX, the predicted probability of pyloromyotomy in the >28 days and ≤6 months old age at exposure category was calculated with all children with pyloromyotomy in that age category as well as all eligible unexposed children in TX. Matching was then performed based on the propensity scores for children with pyloromyotomy in that age category and all available unexposed controls from that state (TX or NY). The propensity scores for every other procedure in each age at exposure category were similarly calculated with matching performed in a similar fashion.

Table 4: ICD-9 Diagnosis Codes for Prematurity and Congenital Anomaly Variables

ICD-9 Codes	Description of Variable
765.21-765.28	<36 Weeks Gestational Age
765.06-765.08, 765.16-765.18	Low Birth Weight (<2500g and \geq 1500g)
765.04, 765.05, 765.14, 765.15	Very Low Birth Weight (<1500g and \geq 1000g)
765.01-765.03, 765.11-765.13	Extremely Low Birth Weight (<1000g)
758.0-758.9	Chromosomal Anomalies
745.0-747.9	Congenital Anomalies of the Heart and Circulatory System
740.0 - 742.9	Congenital Anomalies of the Central Nervous System
743.0-744.9	Congenital Anomalies of the Eye
752.0-752.9	Congenital Anomalies of the Genital Organs
749.0-751.9	Congenital Anomalies of the Digestive System
754.0-756.9	Congenital Musculoskeletal Deformities
759.0-759.9	Other Congenital Anomalies
748.0-748.9	Congenital Anomalies of the Respiratory System
757.0-757.9	Congenital Anomalies of the Skin
753.0-753.9	Congenital Anomalies of the Urinary System
768.0-768.9	Intrauterine Hypoxia
760.70-760.79	Intrauterine Exposure to Noxious Agent
762.0-762.9	Intrauterine Placental Insufficiency

Table 13: Standardized Differences for Covariates in TX Pyloromyotomy Matched Cohorts by Age at Exposure

	>Birth - ≤28 days	>28 days - ≤6 months
Sex	-0.0041	-0.0255
Race	0.0109	0.0326
Income Based on ZIP Code of Residence (quartile)	0.0092	0.0203
Number of Outpatient Visits (quartile)	0.0129	0.0172
Total Number of Inpatient Stays (n)	0.0268	0.0236
<36 Weeks Gestational Age	-0.0067	-0.0173
Low Birth Weight (<2500g and ≥1500g)	-0.0067	-0.0049
Very Low Birth Weight (<1500g and ≥1000g)	0.0225	0.0292
Extremely Low Birth Weight (<1000g)	0	0.0053
Chromosomal Anomalies	0.0141	0
Congenital Anomalies of the Heart and Circulatory System	0.0035	0
Congenital Anomalies of the Central Nervous System	0.0386	0.0254
Congenital Anomalies of the Eye	-0.002	0.0106
Congenital Anomalies of the Genital Organs	0.0139	-0.0305
Congenital Anomalies of the Digestive System	0.0199	0.0023
Congenital Musculoskeletal Deformities	0.0047	0.0046
Other Congenital Anomalies	0.0243	0
Congenital Anomalies of the Respiratory System	0.0032	0.0226
Congenital Anomalies of the Skin	0.0073	-0.0018
Congenital Anomalies of the Urinary System	0.0032	-0.0184
Intrauterine Hypoxia	0.0017	0.0067
Intrauterine Exposure to Noxious Agent	-0.038	0.0112
Intrauterine Placental Insufficiency	0.0285	0.0222
Infectious Disease (Acute)	0.0056	0.0049
Neoplasm (Acute)	-0.0115	-0.006
Endocrine, metabolic, and immunity disorders (Acute)	-0.0043	0.0314
Diseases of blood and blood-forming organs (Acute)	-0.0287	0.0305
Diseases of the nervous system and sense organs (Acute)	0.0023	0.0179
Diseases of the circulatory system (Acute)	0.0037	-0.0078
Diseases of the respiratory system (Acute)	0.0119	0.0295
Diseases of the digestive system (Acute)	-0.01	-0.0027
Diseases of the genitourinary system (Acute)	-0.0071	0.0074
Diseases of the skin and subcutaneous tissue (Acute)	0.0087	0.0196
Diseases of the musculoskeletal system (Acute)	0.0139	-0.0092
Congenital anomalies	0.0194	-0.002
Certain conditions originating in the perinatal period (Acute)	0.0067	-0.0033
Injury and poisoning (Acute)	0.0062	0.0164
Infectious Disease (Chronic)	0	0
Neoplasm (Chronic)	0	0.0053

Endocrine, metabolic, and immunity disorders (Chronic)	-0.0052	0.0155
Diseases of blood and blood-forming organs (Chronic)	0.0057	0.0049
Diseases of the nervous system and sense organs (Chronic)	0.0176	0.001
Diseases of the circulatory system (Chronic)	0.0163	0.0256
Diseases of the respiratory system (Chronic)	0.0138	0.0038
Diseases of the digestive system (Chronic)	0.0071	0.0012
Diseases of the genitourinary system (Chronic)	-0.006	0.012
Diseases of the skin and subcutaneous tissue (Chronic)	0.0225	0.0256
Diseases of the musculoskeletal system (Chronic)	0.0141	0
Certain conditions originating in the perinatal period (Chronic)	-0.0333	0.0087
Injury and poisoning (Chronic)	0	0

Endocrine, metabolic, and immunity disorders (Chronic)	0	0.0323	0.044	0.0493	0.0715	0.0554	0.1019	0.0601	0	0.0298	0.0583
Diseases of blood and blood-forming organs (Chronic)	0	0.025	-0.0078	0.037	0.0344	-0.1013	0.0567	-0.0775	0	-0.103	0
Diseases of the nervous system and sense organs (Chronic)	0	0.0307	0.0175	0.015	-0.0263	-0.0179	0.0681	0.0682	-0.0312	0.0299	0.0148
Diseases of the circulatory system (Chronic)	0	0.022	0.055	0.0125	-0.006	0.0098	0.0567	0.0122	0.0643	0.0344	-0.0821
Diseases of the respiratory system (Chronic)	0	0.0362	0.0048	-0.0155	0.018	-0.0625	-0.077	-0.0764	0.1137	-0.0706	-0.0862
Diseases of the digestive system (Chronic)	0	0.0245	0.0372	0.0208	0.0063	-0.0447	0.1567	0.0504	0.0226	0.0835	-0.0937
Diseases of the genitourinary system (Chronic)	0	0.0055	0.0304	-0.0226	0.0328	0.0407	-0.0465	0.0326	-0.0891	0.0692	-0.0219
Diseases of the skin and subcutaneous tissue (Chronic)	0	0.0176	-0.0118	-0.0102	0.0527	0.1248	0.0853	0.0682	0.1762	0.0169	-0.0359
Diseases of the musculoskeletal system (Chronic)	0	0	0	0	-0.0386	0	0.0567	0.0461	-0.0732	0	0
Certain conditions originating in the perinatal period (Chronic)	0	0.0176	-0.0337	0.012	0	-0.038	0	0	-0.0556	-0.027	0
Injury and poisoning (Chronic)	0	0	0	0	0	0	0	-0.0453	0	0	0

Endocrine, metabolic, and immunity disorders (Chronic)	0.0066	0.0225	-0.0008	0.0135	0.0353	0.0581	-0.004	0.0424	0.0264	-0.0078
Diseases of blood and blood-forming organs (Chronic)	0.0157	0.0404	0.0359	0.0165	0.0257	0.0149	0.0556	-0.0113	-0.0042	-0.0091
Diseases of the nervous system and sense organs (Chronic)	0.0278	0.0137	-0.0049	0.0443	0.0307	0.0057	-0.0286	0.0201	-0.0276	0.0194
Diseases of the circulatory system (Chronic)	0.0226	0.0153	0.0316	0.0209	0.0143	-0.045	0.0538	0.0063	0.0517	-0.0578
Diseases of the respiratory system (Chronic)	0.0239	-0.016	0.0032	0.0168	-0.0085	-0.0059	0.0475	0	-0.0445	-0.0375
Diseases of the digestive system (Chronic)	0.0175	0	0.0322	0.0153	0.0199	0.0033	0.0043	0.0445	0.005	-0.0118
Diseases of the genitourinary system (Chronic)	0.0096	0.0074	-0.0074	0.0084	0.0303	0.0318	0.0161	0.0159	0.0222	0.0699
Diseases of the skin and subcutaneous tissue (Chronic)	0.0075	0.0244	0.0036	0.0054	0.0221	0.0159	0.0215	0.0513	-0.0165	0.088
Diseases of the musculoskeletal system (Chronic)	-0.0037	-0.008	0.0206	0.0439	0	0.027	0.0073	-0.0154	-0.0593	0
Certain conditions originating in the perinatal period (Chronic)	0.0209	0.0322	0.0272	0.018	0.0038	-0.0054	-0.0055	0.0534	0	0
Injury and poisoning (Chronic)	0	0.0159	0	0	-0.0038	0.0243	-0.0168	0.0856	0	0.0212

Endocrine, metabolic, and immunity disorders (Chronic)	0.0198	0.0103	0.0362	0.0253	0.0233	0.0288	0.0464	0.0205	-0.0052
Diseases of blood and blood-forming organs (Chronic)	-0.0249	0.021	0.0444	-0.0006	0.0309	-0.0042	-0.0085	-0.0067	0.0083
Diseases of the nervous system and sense organs (Chronic)	-0.0459	0.0154	-0.0015	-0.0127	0.0092	0.0165	0.0014	0.0188	0.0364
Diseases of the circulatory system (Chronic)	-0.021	-0.0083	0.0134	0.0082	0.0007	0.0175	0.0145	0.0204	0.0242
Diseases of the respiratory system (Chronic)	0.0316	0.0107	0.0018	-0.0029	0.0006	-0.0193	-0.0173	-0.0156	-0.0688
Diseases of the digestive system (Chronic)	0.0578	0.012	0.007	0.0177	0.0177	0.0065	0.0267	0.0331	0.0282
Diseases of the genitourinary system (Chronic)	0.0514	0.0219	-0.0061	0.0207	0.0152	-0.0015	0.0024	0.0285	-0.01
Diseases of the skin and subcutaneous tissue (Chronic)	0.0474	0.0164	0.0293	0.0045	-0.0098	0.0153	0.0443	0.0037	0.0065
Diseases of the musculoskeletal system (Chronic)	0	0	0.0046	0.0147	0	0.0013	0.0044	0.0031	0.0189
Certain conditions originating in the perinatal period (Chronic)	0.0236	0.0333	0.012	-0.003	0.0185	0.0096	0.0261	0.0233	-0.0049
Injury and poisoning (Chronic)	0	0	0.0027	0.0078	0.0042	0.0311	-0.0105	0.0121	-0.0037

Table 17: Standardized Differences for Covariates in NY Pyloromyotomy Matched Cohorts by Age at Exposure

	>Birth - ≤28 days	>28 days - ≤6 months
Sex	-0.0023	-0.0166
Race	0.0118	0.0152
Income Based on ZIP Code of Residence (quartile)	0.0086	0.0283
Number of Outpatient Visits (quartile)	0.0218	0.0182
Total Number of Inpatient Stays (n)	-0.0116	0.0043
<36 Weeks Gestational Age	-0.0038	0.0237
Low Birth Weight (<2500g and ≥1500g)	-0.0062	0.0129
Very Low Birth Weight (<1500g and ≥1000g)	0	0.0154
Extremely Low Birth Weight (<1000g)	0	0.0196
Chromosomal Anomalies	0	0
Congenital Anomalies of the Heart and Circulatory System	-0.0019	-0.023
Congenital Anomalies of the Central Nervous System	-0.0037	-0.0113
Congenital Anomalies of the Eye	0.009	0.0449
Congenital Anomalies of the Genital Organs	0.0158	0.0146
Congenital Anomalies of the Digestive System	-0.0137	0.0401
Congenital Musculoskeletal Deformities	0.0263	0.0351
Other Congenital Anomalies	0	0.0253
Congenital Anomalies of the Respiratory System	0	0.0239
Congenital Anomalies of the Skin	-0.0034	0.0033
Congenital Anomalies of the Urinary System	0.0054	0
Intrauterine Hypoxia	-0.0101	0.0227
Intrauterine Exposure to Noxious Agent	-0.0154	0
Intrauterine Placental Insufficiency	0.0058	-0.0058
Infectious Disease (Acute)	-0.0216	-0.0195
Neoplasm (Acute)	0	0
Endocrine, metabolic, and immunity disorders (Acute)	0.0268	0.0309
Diseases of blood and blood-forming organs (Acute)	0	-0.0113
Diseases of the nervous system and sense organs (Acute)	-0.0032	0.0192
Diseases of the circulatory system (Acute)	0.0268	0
Diseases of the respiratory system (Acute)	-0.0152	0.0107
Diseases of the digestive system (Acute)	-0.0137	-0.0112
Diseases of the genitourinary system (Acute)	0.0253	0.0117
Diseases of the skin and subcutaneous tissue (Acute)	0.0033	0.0079
Diseases of the musculoskeletal system (Acute)	-0.0025	0.021
Congenital anomalies	0.0031	0.0048
Certain conditions originating in the perinatal period (Acute)	-0.0006	-0.0084
Injury and poisoning (Acute)	0	-0.0043
Infectious Disease (Chronic)	0	0
Neoplasm (Chronic)	0	0

Endocrine, metabolic, and immunity disorders (Chronic)	0.0462	0.0369
Diseases of blood and blood-forming organs (Chronic)	-0.0253	0.0065
Diseases of the nervous system and sense organs (Chronic)	0.0025	0.0362
Diseases of the circulatory system (Chronic)	0.053	-0.0133
Diseases of the respiratory system (Chronic)	0.0079	0.034
Diseases of the digestive system (Chronic)	-0.0053	0.0012
Diseases of the genitourinary system (Chronic)	0.0167	0.0253
Diseases of the skin and subcutaneous tissue (Chronic)	0	0.0105
Diseases of the musculoskeletal system (Chronic)	0	0.0139
Certain conditions originating in the perinatal period (Chronic)	0.0029	0.0042
Injury and poisoning (Chronic)	0	0

Endocrine, metabolic, and immunity disorders (Chronic)	-0.0295	0.0135	0.0422	0.0149	0.0182	0.0326	0.0206	0.0752	0.0346	-0.0332	0.0635
Diseases of blood and blood-forming organs (Chronic)	0	0.0121	0.0119	0.0276	-0.0124	0.0274	-0.0546	0.007	0	-0.0102	0
Diseases of the nervous system and sense organs (Chronic)	0	0.0329	0.0404	0.0559	0.0809	0.0097	0.0944	0.0606	-0.0329	0.1558	0.0583
Diseases of the circulatory system (Chronic)	0	0.0094	0.0643	0.0495	-0.0535	0.0122	-0.0195	0.0248	0.0208	0.0436	-0.0223
Diseases of the respiratory system (Chronic)	0	-0.001	0.0145	0.0442	-0.0112	-0.0215	-0.0126	0.0536	0.0091	0.0505	0.1157
Diseases of the digestive system (Chronic)	0	0.0027	0.049	0.0035	0.0444	0.0537	-0.041	-0.0501	0.1017	0.063	-0.0569
Diseases of the genitourinary system (Chronic)	0	-0.0027	0.0047	0.0312	0.0468	-0.0377	0.045	0.0384	0.0447	0.0731	0
Diseases of the skin and subcutaneous tissue (Chronic)	0	0.0256	0.0248	0.0281	-0.0189	0.0299	0.0214	-0.0282	0.0357	0.0434	0.0252
Diseases of the musculoskeletal system (Chronic)	0	-0.0073	-0.0167	-0.0094	0	0.0335	0	-0.0277	0.1032	0	0
Certain conditions originating in the perinatal period (Chronic)	0	-0.006	-0.009	0.0045	0.0292	0.0325	0.0396	-0.0365	0	0	0
Injury and poisoning (Chronic)	0	0	0	-0.0044	0.0157	-0.0164	-0.0119	-0.0398	0.0241	0.0702	-0.0879

Endocrine, metabolic, and immunity disorders (Chronic)	-0.0085	0.0169	0.0368	0.0157	0.0186	0.0226	-0.0053	-0.0572	0.0333	0.1678
Diseases of blood and blood-forming organs (Chronic)	-0.0038	0.0165	0.0269	0.0502	-0.0044	0.0216	0.0245	-0.0124	0.1212	0
Diseases of the nervous system and sense organs (Chronic)	0.0129	-0.0074	0.0218	-0.0161	0.0495	0.0726	-0.0335	0.0225	0.0086	0.073
Diseases of the circulatory system (Chronic)	0.0365	0.0026	0.0329	-0.0395	0.0074	0.0128	0	0.0092	0.0631	0
Diseases of the respiratory system (Chronic)	0.0428	-0.0105	-0.0112	0.0064	-0.0181	0.0133	-0.0244	0.0129	0.0622	0.1018
Diseases of the digestive system (Chronic)	0.0217	0.0245	-0.0047	0.0449	0.0127	0.0555	-0.0068	-0.0508	0.0048	0.0948
Diseases of the genitourinary system (Chronic)	0.0183	0.0202	0.0451	0.0063	0.0527	-0.0073	-0.0046	0.0167	0.0382	0.0216
Diseases of the skin and subcutaneous tissue (Chronic)	-0.0029	-0.0027	0.028	0.0041	-0.0256	0.0119	0.0291	-0.0065	0.0124	-0.0398
Diseases of the musculoskeletal system (Chronic)	0	0.0251	0.0301	-0.0198	0.0308	0.0315	0	-0.0473	-0.0122	0
Certain conditions originating in the perinatal period (Chronic)	0.0272	0.0206	0.004	0.0076	-0.0227	0.0164	-0.0156	0.0131	0	0
Injury and poisoning (Chronic)	0	0.025	-0.005	-0.0089	0.0121	0.0368	0	-0.0574	-0.0284	-0.0314

Table 20: Standardized Differences for Covariates in NY Tonsillectomy and/or Adenoectomy Cohorts by Age at Exposure

	>6 months - ≤1 yr	>1 yr - ≤1.5 yrs	>1.5 yrs - ≤2 yrs	>2 yrs - ≤2.5 yrs	>2.5 yrs - ≤3 yrs	>3 yrs - ≤3.5 yrs	>3.5 yrs - ≤4 yrs	>4 yrs - ≤4.5 yrs	>4.5 yrs - ≤5 yrs
Sex	-0.0598	-0.0225	0.0204	-0.0211	-0.0107	-0.0191	0.0013	0.0305	0.0012
Race	0.116	0.0694	0.0399	0.0203	0.0265	0.0341	0.0096	0.029	0.0248
Income Based on ZIP Code of Residence (quartile)	0.1733	0.0736	0.0517	0.022	0.0381	0.0234	0.0358	0.0315	0.0203
Number of Outpatient Visits (quartile)	0.0528	0.0515	0.0422	0.0401	0.0305	0.0597	0.0329	0.017	0.0376
Total Number of Inpatient Stays (n)	0.037	0.0085	0.046	0.0212	0.0533	0.049	0.039	0.0272	0.032
<36 Weeks Gestational Age	-0.0166	0.0367	0.0131	0.0019	0.0432	0.0169	0.0009	0.0187	0.0188
Low Birth Weight (<2500g and ≥1500g)	-0.0483	0.0347	0.0278	0.0245	0.0265	-0.0029	-0.0065	0.006	0.0118
Very Low Birth Weight (<1500g and ≥1000g)	0.0449	0.0056	-0.0071	0	0.0033	-0.007	0.0022	0.0021	0
Extremely Low Birth Weight (<1000g)	0	0.0343	0.0139	0.0172	0.0266	0.0031	0.0027	-0.0034	-0.0147
Chromosomal Anomalies	0	0	-0.0085	0.008	0.0162	0.0051	0.0078	0	-0.0073
Congenital Anomalies of the Heart and Circulatory System	-0.0662	0.0303	0.0167	0.0071	0.0015	0.019	0.0013	0.0245	0.0357
Congenital Anomalies of the Central Nervous System	-0.1085	0	0	-0.0172	0	0.0092	0	0.022	0.0177
Congenital Anomalies of the Eye	-0.0139	-0.0107	-0.012	0.0124	0.0199	0.0246	0.029	-0.0177	0.0297
Congenital Anomalies of the Genital Organs	0	0.0049	0.0069	0.0061	-0.0057	0.0115	0	0	0.0035
Congenital Anomalies of the Digestive System	0.0212	0	0.0257	0.0068	-0.0073	-0.0199	-0.0296	0.016	0.0396
Congenital Musculoskeletal Deformities	0	0.02	0.0141	0.0153	-0.0377	-0.0043	-0.0018	0.0052	0.0257
Other Congenital Anomalies	0	0.022	-0.0199	0.007	0	0.013	-0.0219	0	0
Congenital Anomalies of the Respiratory System	0	0.0101	0.0271	-0.0046	-0.0045	0.0063	-0.0062	-0.0183	0.0243
Congenital Anomalies of the Skin	-0.0273	-0.0253	-0.0163	-0.0013	0.0469	0	0.0188	0.014	0.0105
Congenital Anomalies of the Urinary System	-0.0192	0.0303	0.0029	-0.0274	-0.0168	-0.0367	0.0038	0.0347	-0.0286
Intrauterine Hypoxia	0	-0.0054	0	0.0122	-0.0064	0.0128	0	0	-0.0075
Intrauterine Exposure to Noxious Agent	0.0318	0.0166	-0.0269	0.027	-0.0032	-0.0127	0.0047	0.0095	0.0414
Intrauterine Placental Insufficiency	-0.0823	-0.0029	0.0067	0.0134	0	0.016	0.0094	0.0101	0
Infectious Disease (Acute)	0.0041	-0.0046	-0.0095	-0.0143	-0.0023	-0.0104	-0.0367	-0.0367	-0.0263
Neoplasm (Acute)	-0.0336	-0.0189	0.0277	0.0578	0.0296	-0.0109	0.0055	-0.0016	-0.0061
Endocrine, metabolic, and immunity disorders (Acute)	0.0954	0.0273	-0.002	0.0221	0.0172	0.031	0.0266	0.0108	0.0227
Diseases of blood and blood-forming organs (Acute)	-0.0483	-0.002	0.007	0.0096	0.0293	0.0142	0.026	-0.0012	0.0339
Diseases of the nervous system and sense organs (Acute)	-0.0123	0.0324	-0.0091	-0.0134	-0.0528	-0.0176	-0.0114	-0.0148	-0.0034
Diseases of the circulatory system (Acute)	0	0.0056	-0.011	0.0077	0.0136	0.002	0.0289	-0.006	0.0022
Diseases of the respiratory system (Acute)	-0.0845	-0.0044	-0.0539	-0.0533	-0.0138	-0.0147	-0.0389	-0.0011	-0.0154
Diseases of the digestive system (Acute)	0.0472	0.001	0.0151	-0.0232	0.003	-0.0182	-0.0084	0.0179	-0.0373
Diseases of the genitourinary system (Acute)	-0.0749	0.0317	0.0306	0.018	0.0089	0.0254	0.0124	0.0079	-0.0007
Diseases of the skin and subcutaneous tissue (Acute)	-0.076	0.0224	0.0041	0.0225	-0.0171	-0.0151	-0.0004	0.015	-0.0082
Diseases of the musculoskeletal system (Acute)	0.0318	0.0124	0.0072	0.0567	0.0277	0.008	0.0134	0.0356	0.0045
Congenital anomalies	-0.0159	0.04	0.0022	0.0333	0.0307	0.0118	0.0355	0.0201	0.0291
Certain conditions originating in the perinatal period (Acute)	-0.052	0.0411	0.0417	0.0204	0.0106	-0.0011	-0.0088	0.0266	-0.0006
Injury and poisoning (Acute)	0.0313	-0.0031	-0.0025	0.0203	-0.0039	-0.0193	0.0004	-0.0005	-0.0221
Infectious Disease (Chronic)	0	0	0.035	0.0239	0.0146	0.0275	0.0068	0	0
Neoplasm (Chronic)	0	0.0056	0.0384	0.0039	0.0139	0	0.0128	-0.0037	-0.0027

Endocrine, metabolic, and immunity disorders (Chronic)	0.0146	0.0403	-0.0098	0.0285	0.0285	-0.0144	-0.0018	0.0183	0
Diseases of blood and blood-forming organs (Chronic)	0.0212	-0.0187	0.0238	0.0054	0.0263	0.0068	0.0212	0.0387	0.0069
Diseases of the nervous system and sense organs (Chronic)	-0.0419	-0.0179	0	0.0263	0.0275	0.011	0.0327	0.0193	-0.0049
Diseases of the circulatory system (Chronic)	-0.0192	-0.0025	0.0151	0.0176	0.0333	0.0051	-0.0046	0.014	0.0084
Diseases of the respiratory system (Chronic)	-0.0161	0.0101	0.004	-0.0297	-0.0034	0.0102	-0.0085	-0.0068	0.0096
Diseases of the digestive system (Chronic)	-0.0214	0.0468	0.0186	0.0106	0.0241	0.0326	0.0046	0.0286	0.0402
Diseases of the genitourinary system (Chronic)	0	-0.0043	0.0049	0.0191	0.0126	0.021	0.0278	0.0061	0.0072
Diseases of the skin and subcutaneous tissue (Chronic)	-0.0483	-0.0501	-0.015	0.0021	0.0014	0.0344	0	0.0082	0.0424
Diseases of the musculoskeletal system (Chronic)	0.0212	0.0098	0.0269	-0.0044	0.0181	0.0207	0.0121	0.0035	0.0219
Certain conditions originating in the perinatal period (Chronic)	0.037	0.0132	-0.0223	0.028	0.0206	0.0096	0.0154	0.0181	0.0477
Injury and poisoning (Chronic)	0	0.0371	0.0049	0.0075	0.0245	-0.0101	0.0181	-0.0127	0.0045

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